

accumulation, to have contributed essentially to the formation of the coal.

We may moreover remark, that this genus being excluded from the monocotyledonous division; *Flabellaria borassifolia* of M. de Sternberg, from the coal-mines of Bohemia, being also rejected from the family of the Palms to be arranged with the gymnospermous division; and the genus *Artisia* appearing to be similarly situated; a few fruits only remain in these ancient strata to represent this large division of the vegetable kingdom, and the structure of these is too imperfectly known to allow of our placing them with any probability in this natural division, when we are unacquainted with either their stems or leaves.

Hence everything leads us to conclude from the researches which have hitherto been made, that the terrestrial vegetation of the period of the coal-formation was limited to two of the large divisions of the vegetable kingdom—the acrogenous or vascular Cryptogamia, and the gymnospermous dicotyledonous Phanerogamia.

XIX.—*Characters of some undescribed species of Chalcidites.*

By FRANCIS WALKER, Esq., F.L.S.

1. *Chalcis Alphius*, mas et fem. *Nigra, antennis nigris, pedibus flavis nigro et piceo cinctis, metafemoribus rufis flavo-variis aut nigris, alis limpidis.* (Corp. long. lin. 2—2½; alar. lin. 3½—4.)

Male.—Body black, convex: head and thorax punctured: head nearly as broad as the thorax; vertex broad; front impressed: antennæ black, filiform, nearly as long as the thorax: prothorax transverse, subquadrate: scutum very large; sutures of the parapsides distinct; axillæ remote from each other; scutellum obconic, having a rim behind: propodeon obconical, declining, rugulose: podoon very short: abdomen smooth, shining, narrower and much shorter than the thorax; metapodeon occupying more than half the dorsum; octoon and following segments short: legs yellow; coxæ black; profemora and mesofemora black, their tips yellow; metafemora red, thick, partly yellow on the outside and armed beneath with nine or ten little black teeth; protibiæ encircled with red; mesotibiæ encircled with a piceous band; metatibiæ curved, piceous at the base and in the middle; tips of the tarsi piceous: wings limpid; squamulæ yellow; nervures fulvous; humerus much less than half the length of the wing; ulna not half the length of the humerus; radius more than half the length of the ulna; cubitus hardly half the length of the radius; stigma very small.

The colour of the legs varies; the protibiæ are sometimes red; the mesotibiæ black, yellow at the base and at the tip; the metafemora altogether black; the nervures of the wings piceous. The antennæ

of the female are clavate, the abdomen is keeled beneath, and the metafemora are black.

From Bombay. In the collection of the Rev. F. W. Hope.

2. Chalcis Amphilochus, fem. *Nigra, scutello bispinoso, antennis nigris, pedibus flavis, coxis et metafemoribus nigris, profemoribus, mesofemoribus et metatibiis nigris apice flavis, protibiis et mesotibiis nigro vittatis, alis limpidis.* (Corp. long. lin. 2; alar. lin. 4.)

Body convex, pubescent, black: head and thorax thickly punctured: head transverse, nearly as broad as the thorax: antennæ stout, subclavate, black; first joint long, slender; second small; third and fourth very minute; fifth and following joints to the tenth compact, pubescent, successively decreasing in length; club oval, much longer than the tenth joint: thorax nearly oval: prothorax large, subquadrate, nearly as broad as the mesothorax; its length less than half its breadth; scutum of the mesothorax broad; sutures of the parapsides not very distinct, approaching each other behind; axillæ triangular, hardly nearer to each other than are the sutures of the parapsides; scutellum nearly round, clothed with white hairs on each side and at the tip, along which is a rim prolonged into two very short spines: metathorax transverse, very short: propodeon transverse, abruptly decumbent: pondeon very short: abdomen oval, a little shorter than the thorax; metapodeon smooth, shining, occupying nearly one half of the dorsum; octoon and the following segments dull, pubescent; octoon not half the length of the metapodeon; enaton much shorter than the octoon; decaton shorter than the enaton; protelum nearly as long as the decaton; paratelum and telum short: legs yellow; coxæ and hind thighs black; fore and middle thighs and hind tibiæ black, their tips yellow; a black stripe on each fore and middle tibia: wings limpid; squamulæ dull fulvous; nervures piceous; humerus much less than half the length of the wing; ulna more than half the length of the humerus; radius a little longer than the ulna; cubitus very short; stigma furcate, very small.

Found at Sierra Leone by the Rev. D. F. Morgan, and presented by him to the British Museum.

3. Chalcis Visellus, fem. *Nigra, scutello bispinoso, antennis nigris, pedibus flavis, metafemoribus nigris apice flavis, alis limpidis.* (Corp. long. lin. $2\frac{1}{2}$; alar. lin. $4\frac{1}{2}$.)

Body convex, pubescent, black: head and thorax thickly punctured: head transverse, nearly as broad as the thorax: antennæ stout, nearly filiform, black; first joint long, slender; second small; third and fourth very minute; fifth and following joints to the tenth compact, pubescent, successively decreasing in length; club oval, much longer than the tenth joint: thorax somewhat oval: prothorax large, subquadrate, nearly as broad as the mesothorax; its length less than half its breadth: scutum of the mesothorax broad; sutures of the parapsides not very distinct, approaching each other behind; axillæ triangular, separated from each other by a space almost equal

to the hind border of the scutum, which is included between the sutures of the parapsides; scutellum rhomboidal or nearly round, clothed with white hairs on each side and at the tip, along which is a rim prolonged into two short spines: metathorax transverse, very short: propodeon transverse, abruptly decumbent: podoon very short: abdomen oval, a little shorter than the thorax; metapodoon smooth, shining, occupying nearly one half of the dorsum; octoon and the following segments dull, pubescent; octoon not half the length of the metapodoon; ennaton much shorter than the octoon; decaton shorter than the ennaton; protelum nearly as long as the decaton; paratelum and telum short: legs yellow, in structure like the other species of the genus; coxæ black; hind thighs black along two-thirds of their length from the base: wings limpid; nervures piceous; humerus much less than one half the length of the wing; ulna more than half the length of the humerus; radius a little longer than the ulna; cubitus very short; stigma furcate, very small.

Found at Sierra Leone by the Rev. D. F. Morgan, and presented by him to the British Museum.

4. *Haltichella Sepyra*, mas. *Picea, antennis pedibusque nigris, metafemoribus, protarsis et mesotarsis rufis, alis limpidis.* (Corp. long. lin. 2; alar. lin. $3\frac{1}{2}$.)

Male.—Body dark piceous, convex: head and thorax punctured: head transverse, nearly as broad as the thorax; vertex broad; front impressed: antennæ black, filiform, shorter than the body: prothorax transverse, subquadrate, longer than the head; its hind border concave: sutures of the parapsides distinct or complete; axillæ remote from each other; scutellum obconical, having a rim on either side and behind, where it is slightly excavated: propodeon obconical, declining, rugulose: podoon very short: abdomen oval, smooth, shining, shorter and rather narrower than the thorax; metapodoon long; octoon and following segments short: legs black; knees and tarsi red; metafemora red, thick, each armed with an obtuse basal tooth and having a black edge along its length beneath; metatibiæ curved; metatarsi black: wings limpid; nervures piceous; humerus much less than half the length of the wing; ulna not one-third of the length of the humerus; radius nearly as long as the ulna; cubitus very short; stigma very small.

From Bombay. In the collection of the Rev. F. W. Hope. Perhaps the difference between *Haltichella* and *Hockeria* is too slight to admit of their being divided. In addition to these two genera, the family *Chalcidæ* comprises the following: *Smiera*, *Epitranus*, *Chalcitella*, *Conura*, *Chalcis*, *Chirocerus*, *Phasgonophora*, *Dirhinus*, *Notaspis* and *Agamerion*.

5. *Callimome Amyrius*, fem. *Viridis, abdomine basi cyaneo, antennis nigris, pedibus flavis, femoribus viridibus, alis limpidis.* (Corp. long. lin. $1\frac{1}{4}$; alar. lin. 2.)

Body bright green; base of the abdomen blue: antennæ black, clavate, as long as the thorax; base of the first joint yellow: sheaths

of the oviduct as long as the body: legs yellow; coxæ and thighs green; tips of the latter yellow; tips of the tarsi fuscous: wings limpid; nervures piceous; ulna shorter than the humerus; radius very short; cubitus extremely short. The characters which are common to the genus, such as the minute transverse undulations on the thorax, the long scutum, the distinct sutures of the parapsides and the extremely short podeon, are here omitted. The length of the oviduct will distinguish this insect from most of the British species of *Callimome**. In this character it most resembles *C. Bedequaris*, *varians*, *scutellaris*, *Hederæ* and *Arundinis*, but it has more slender antennæ and a smaller body than any of these species.

October; near London.

6. *Lamprotatus Rubrius*, mas. *Viridis, abdomine æneo-viridi, antennis nigris, pedibus fulvis, femoribus viridibus, alis limpidis.* (Corp. long. lin. $1\frac{1}{2}$; alar. lin. $2\frac{1}{2}$.)

Male.—Body convex: head and thorax finely squameous: head a little broader than the thorax: antennæ stout, filiform, not longer than the thorax; first joint long, dilated beneath; second short-cyathiform; third and fourth very minute; fifth and following joints to the tenth long, linear, successively decreasing in length; club linear, conical at the tip, twice the length of the tenth joint: thorax oval, stout, deep, very convex: prothorax moderate, transverse: scutum of the mesothorax broad; sutures of the parapsides very distinct, approaching each other; axillæ large, triangular, not conniving; scutellum truncate-conical, not impressed in front but having a transverse channel near the tip: metathorax large, obconic, decumbent: podeon short, stout, punctured, less than one-sixth of the length of the abdomen: abdomen oval, smooth, shining, slightly convex, shorter and much narrower than the thorax; metapodeon occupying more than one-third of the dorsum, having a broad channel throughout its length; octoon less than one-half of the metapodeon in length; ennaton much shorter than the octoon; decaton a little longer than the ennaton; protelum as long as the ennaton; paratelum shorter than the protelum; telum very short: wings ample; humerus much less than half the length of the wing; ulna not more than half the length of the humerus; radius twice the length of the ulna; cubitus rather shorter than the ulna; stigma large, pyriform, emitting a short branch towards the radius.

Found by Dr. Greville near Edinburgh.

7. *Lamprotatus Helenor*, mas. *Æneo-viridis, antennis nigris, pedibus fulvis, alis limpidis.* (Corp. long. lin. $1\frac{1}{4}$; alar. lin. $2\frac{1}{2}$.)

Female.—Body convex: head and thorax finely squameous: head a little broader than the thorax: antennæ filiform, longer than the thorax; first joint long, slender; second short-cyathiform; third and

* *Callimome* is allied to *Gastrancistrus* through *C. nitidulus*. *C. cyaneus*, Kollar, approaches nearer than any other species that I have seen to *Ormyrus*, which genus connects the *Torymidæ* with the *Eucharidæ*.

fourth very minute; fifth and following joints long, linear, slightly decreasing in length until the tenth; club linear, conical at the tip, much longer than the tenth joint: thorax nearly oval, very convex: prothorax rather large, transverse, narrower in front: scutum of the mesothorax large, transverse, having the scales on its surface disposed in minute transverse undulations; sutures of the parapsides distinct, slightly approaching each other; scutellum truncate-conical, having a very narrow suture at the base: metathorax convex, prominent, decumbent: podoon not more than one-sixth of the length of the abdomen: abdomen nearly conical, smooth, shining, slightly convex, narrower and much shorter than the thorax; metapodoon covering more than half the dorsum, slightly concave at the base; octoon and all the following segments very short: wings ample; humerus less than half the length of the wing; ulna scarcely half the length of the humerus; radius much longer than the ulna; cubitus about one-half of the length of the ulna; stigma very large, forming an irregular cone whose tip points toward the radius.

Found by Dr. Greville near Edinburgh. It is nearly allied to *L. elegans*.

8. *Lamprotatus Babilus*, mas. *Viridis, antennis nigris, pedibus fulvis piceo cinctis, femoribus viridibus, alis fuscis.* (Corp. long. lin. $1\frac{1}{4}$; alar. lin. $2\frac{1}{4}$.)

Female.—Body convex: head and thorax finely squameous: head large, transverse, a little broader than the thorax: antennæ short, compact, subclavate, rather shorter than the thorax; first joint long, linear; second cyathiform; third and fourth very minute; fifth and following joints linear, successively decreasing in length until the tenth, which is as broad as long; club linear, conical at the tip, much more than twice the length of the tenth joint: thorax very convex: prothorax moderate, transverse; fore corners rounded: scutum of the mesothorax large, longer than broad; sutures of the parapsides very distinct, approaching each other; axillæ large, triangular, not conniving; scutellum truncate-conical, very prominent, not impressed in front, but having a transverse channel before the tip: metathorax large, obconic, decumbent: podoon short, stout, not more than one-sixth of the abdomen in length: abdomen short-oval, shining, very finely squameous, deep, very convex, much shorter and a little narrower than the thorax; metapodoon conical, quite smooth, channeled and abruptly decumbent towards the fore border, occupying a little less than one-third of the dorsum; octoon more than half the length of the metapodoon; ennaton shorter than the octoon; decaton as long as the ennaton; protelum short; paratelum and telum very short: wings ample; humerus much less than half the length of the wing; ulna rather less than half the length of the humerus; radius very much longer than the ulna; cubitus stout, much shorter than the ulna; stigma large, pyriform, emitting a short branch towards the radius.

Found by Dr. Greville near Edinburgh. It is allied to *L. fuscipes*.

9. *Lamprotatus Venilia*, mas. *Viridis*, abdomine nigro-cupreo, antennis nigris, pedibus flavis fusco cinctis, femoribus basi viridibus, alis limpidis. (Corp. long. lin. $\frac{3}{4}$; alar. lin. $1\frac{1}{2}$.)

Body convex: head and thorax squameous: head dark green, short, transverse, a little broader than the thorax: antennæ black, stout, slightly increasing in breadth towards their tips, rather longer than the thorax; first joint long, slender; second cyathiform; third and fourth very minute; fifth and following joints to the tenth successively decreasing in length; club fusiform, twice the length of the tenth joint: thorax oval, dark green: prothorax transverse, short, narrower in front: scutum of the mesothorax large; sutures of the parapsides distinct, approaching each other; axillæ large, triangular, not conniving; scutellum truncate-conic, having a channel at the tip but none at the base: metathorax large, obconic, decumbent: podeon squameous, stout, very short, not longer than one-sixth of the abdomen: abdomen nearly linear, smooth, flat, dark purple, shorter and narrower than the thorax; metapodeon conical, concave, mostly æneous green, occupying nearly half the dorsum; the following segments from the octoon to the protelum short, transverse, nearly equal in size; paratelum and telum very short: legs yellow; coxæ green, squameous; thighs fuscous; middle and hind tibiæ having two fuscous stripes across each; protarsi fulvous; mesotarsi fuscous; metatarsi pale yellow, fuscous at their tips: wings limpid; nervures fuscous; humerus less than half the length of the wing; ulna about half the length of the humerus; radius very much longer than the ulna; cubitus rather more than half the length of the ulna; stigma very small, emitting a short branch towards the radius. Length of the body $\frac{3}{4}$ lin.; expansion of the wings $1\frac{1}{4}$ lin.

Found by Dr. Greville in Northumberland. The black and comparatively stout antennæ will distinguish this species from *L. tarsalis*, *annulipes*, *costalis*, *semiauratus*, *philochortoides*, *cyaneus*, *brevis*, *contiguus*, *linearis* and *flicornis*. The very slender pale stigma separates it from all the other species, having dark bands round their middle legs.

10. *Pilonotus Hortensia* (Haliday MSS.). *Viridis*, antennæ luteæ, pedes flavi, femoribus basi fuscis, alæ limpidæ.

Male.—Head and thorax bright green, convex, shining, finely squameous: head a little broader than the thorax: antennæ inserted near the mouth, luteous, slightly clavate, shorter than the thorax; first joint long, slender, slightly curved; second cyathiform; third and fourth very minute; fifth and following short and very small; club fusiform, more than twice the length of the tenth joint: thorax oval: prothorax short, narrower in front: scutum of the mesothorax broad; sutures of the parapsides hardly visible: axillæ rather large, not conniving; scutellum truncate-conical: metathorax large, obconic, declining: podeon very short, so that the abdomen appears sessile: abdomen dark purple, smooth, depressed, nearly linear, narrower and much shorter than the thorax; metapodeon large, green towards the base, covering at least one-third of the dorsum; octoon, ennaton

and deca-ton moderate, nearly equal in size; protelum short; paratelum and telum very short: legs yellow; coxæ green; hind thighs fuscous towards their base: wings limpid; nervures pale yellow; humerus much shorter than half the length of the wing; ulna half the length of the humerus; radius longer than the ulna; cubitus more than half the length of the ulna; stigma very small.

Female.—Antennæ subclavate, as long as the thorax; first joint long, slightly curved; second long-cyathiform; third and fourth very minute; fifth and following joints to the ninth successively broader; club fusiform, broader than the ninth joint, and more than twice its length: abdomen much compressed, concave along the back towards the base, a little longer than the thorax, like that of the male as far as regards the relative size of the segments.

Found by Dr. Greville in Northumberland.

The thorax of this species is more convex than that of *P. Adamas*.

11. *Eupelmus Amphitus*, fem. *Viridis, micans, antennis nigris, oviductu pedibusque flavis, profemoribus fusco vittatis, alis limpidis*. (Corp. long. lin. $2\frac{1}{4}$; alar. lin. 4.)

Bright golden green: head and thorax minutely squameous, pubescent: front of the head bluish green: eyes and ocelli red: antennæ black, slender, subclavate, as long as the thorax: thorax fusiform: abdomen fusiform, a little longer than the thorax: oviduct yellow, hardly equal to one-sixth of the length of the abdomen: legs yellow; a short fuscous stripe on the outside of each of the profemora; mesotibiæ armed with long spines; mesotarsi dilated: wings limpid; nervures yellow; humerus rather more than one-third of the length of the wing; ulna rather shorter than the humerus; radius about one-third of the length of the ulna; cubitus a little shorter than the radius; stigma small.

From Bombay. In the collection of the Rev. F. W. Hope.

Eupelmus with *Urocryptus*, *Cheilonurus*, *Metapelma*, *Prionopelma*, *Caloseter* and *Stenocera* forms the family *Eupelmidæ*, to which *Lycisca*, *Epistenia*, *Trigonoderus*, *Notanisus* and *Cleonymus* are nearly allied. *Platynocheilus* and *Merostenus* may be included in the same group with the latter genera.

12. *Cerchysius Vulso*, fem. *Viridis, capite cupreo, abdomine antennisque nigris, pedibus flavis viridi cinctis, alis limpidis*. (Corp. long. lin. $\frac{3}{4}$; alar. lin. $1\frac{1}{2}$.)

Body slender: head and thorax convex, squameous: head cupreous, very short, a little broader than the thorax; vertex broad; front abruptly declining, not impressed: eyes of moderate size, not prominent: ocelli disposed in a triangle on the vertex: antennæ black, subclavate, very slender, rather shorter than the body; first joint slender, very long; second rather long, increasing in breadth from the base to the tip; the following joints from the third to the eighth successively decreasing in length and slightly increasing in breadth; club long-fusiform, rather broader than the eighth joint and more than thrice its length: thorax elliptical, bright green: prothorax trans-

verse, of moderate size, narrower in front: scutum of the mesothorax broad, slightly convex; parapsides united to the scutum; axillæ complete; scutellum obconic, prominent, very convex, abruptly declining behind the tip: propodeon subquadrate, rather large, declining; podoon extremely short: abdomen slender, lanceolate, depressed, black, smooth; shining, compressed towards the tip, rather longer and much narrower than the thorax; metapodeon bright green and like the following segments of moderate size: oviduct exerted in length nearly equal to one-fourth of the abdomen; its sheaths black: legs slender, yellow, very long; mesotibiæ and mesotarsi dilated and the former armed with very long spines; coxæ and metafemora green; profemora and metatibiæ green, their tips yellow; mesotibiæ fuscous towards the base; protarsi fulvous; tips of the tarsi fuscous: wings limpid; nervures yellow; humerus much less than half the length of the wing; ulna and radius piceous, broad, very short; cubitus of moderate length, pointing towards the disc of the wing; stigma very small.

England. From the collection of the Rev. G. T. Rudd.

[To be continued.]

XX.—*Botanical Notices from Spain.* By MORITZ WILLKOMM*.

[Continued from vol. xvi. p. 252.]

NO. IX. GIBRALTAR, April 4th, 1845.

I WAS unavoidably detained in Cadiz by illness and incessant rains until the 18th of March. Meanwhile, in consequence of the warm rain, the vegetation was remarkably forward, and promised a richer harvest than hitherto. *Retama monosperma* was quite out of bloom; on the other hand, under the latter, the sandy soil was covered with *Anagallis latifolia*, L., and near the church of San José the beautiful *Celsia sinuata*, Cav., in company with *Picridium tingitanum*, Desf. The salt marshy lowlands of Chiclana appeared covered with *Cotula coronopifolia*, L., and looked at a distance quite yellow; near the hedges blossomed *Cynoglossum pictum*, Ait., *Euphorbia serrata*, L., *Muscari comosum*, Mill.; and on dry grass-plats, *Iris Sisyrinchium*, L., and a form of *Ornithogalum umbellatum*, L., with large flowers, which is common throughout the whole west of Andalusia; and Boissier, in his 'Elenchus' (No. 181), has described it as a new species under the name of *O. beticum*, but in his 'Journey' he places it as merely a form of *O. umbellatum*. On the following day I set out, in incessant rain, for Couil, a spot formerly celebrated for its sulphur-mines, lying close to the coast, the way to which led over a hilly arid highland, in parts covered with pine forests, and in parts with low copsewood and arable land. In the copse, the *Sarothamnus gaditanus*, B. e. R., was remarkable at a distance from its large golden blossoms; less frequent was *Calycotome villosa*, Lk., which in the

* Translated from the Botanische Zeitung, Nov. 7, 1845. No. VIII. has not yet appeared in the Bot. Zeit.